NORTH CAROLINA LAPIDARY SOCIETY

March 1982



MEETINGS:

Third Thursday each month. GEMCRAFTERS 2106 Patterson St. Greensboro, NC 27407



MEETING DATE: March 18, 1982

TIME

: 7:30 PM

PLACE

: GEMCRAFTERS

2106 Patterson St. Greensboro, NC

PROGRAM

: TWO slide/tape programs on faceting. Interesting for all, but ideal for

beginners. You'll learn some things not

to do.

OFFICERS 1982

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EXECUTIVE BOARD meets at the call of the president.

MEMBERSHIP DUES : \$12.00 per year - prorated quarterly.

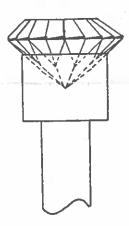
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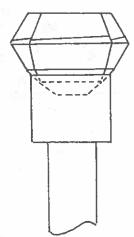
ALIGNMENT IS IMPORTANT

To many faceters, one of the most vexing problems is getting a level girdle of even thickness after the stone has been transferred and re-inserted in the faceting machine. Often, girdle problems are blamed on a presumed shift of the stone on the dop during the transfer process. More often than not, however, girdle problems are caused by imprecise re-alignment of the stone in the machine. The following sketches show some of the effects of mis-alignment.

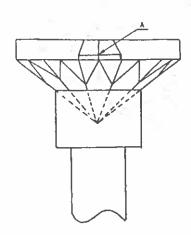


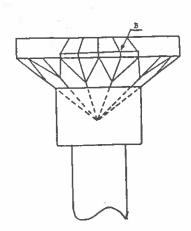
On a round stone with a faceted girdle, mis-alignment produces a saw-tooth girdle as shown at the left. If the girdle is not faceted, the same problem occurs but the scallops on the girdle tend to mask the unevenness. The correction in either case is to realign the stone either by use of the cheater or by physically realigning the dop in the quill of the machine.

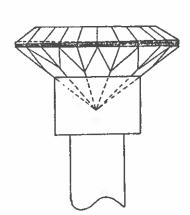
On a square or emerald cut stone, mis-alignment produces the kind of uneven girdle shown in the sketch at the right. Here, too, correction is by realignment.



On marquise and oval stones (also heart and pear), problems caused by mis-alignment are not as easy to detect because each girdle facet is matched to the preceeding one shown by points A and B in the sketches below. As a result, while the crown girdle line is straight, it is not parallel to that of the pavilion. This results in a girdle much thicker on one end than the other. On the other side of the stone, the slant in the crown girdle line is just the reverse. The correction as in the other examples is to realign the stone or better, do it accurately the first time. TJR.





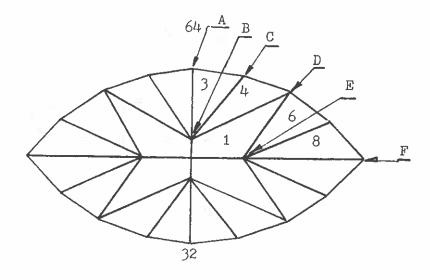


Diamond Cutters Marquise

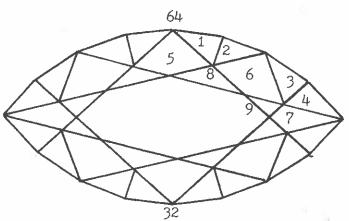
by Tom Ricks

This design has the pattern of facets shown as the "modern" marquise in a sketch in the book "Diamond Cutting", by Basil Watermeyer, originator of the Barion Cut. It is said that the pavilion pattern was devised to eliminate the "bow-tie" effect seen in many marquise-shaped stones.

The angles given were used for CZ and a 64 index was used. It is true that the "bow-tie" effect was eliminated. However, there is a broken-up pattern of dark facets across the width of the stone. This is not objectionable but perhaps angle variations could eliminate the dark facets altogether. Readers' comments are solicited.



NOTE: Diagrams are schematic.
Girdle segments (facets) are not of uniform length. The side girdles are the shortest and the length increases toward the tips or end facets.



DIAMOND CUTTERS' MARQUISE con't.

| PAVILION | | | |
|----------|--------|-------------|---|
| STEP | ANGLE | INDEX | COMMENT |
| 1. | 410 | 05-27-37-59 | Cut to same stop. Establish centerpoint. |
| 2. | 90° | 01-63-31-33 | Cut to same stop. Establish width of the stone and level girdle. L/W ratio = $2/1$. |
| 3. | 49.5° | 01-63-31-33 | Cut to same stop-establish points A & B. Point B should be $3/4$ the distance from girdle to culet. |
| 4. | 46.5° | 03-61-29-35 | Cut to point B. |
| 5• | 90° | 03-61-29-35 | Cut to point C. Keep girdle level. |
| 6. | 410 | 06-26-38-58 | Cut to point D. |
| 7. | 90° | 06-26-38-58 | Cut to point D. Keep girdle level. |
| 8. | 38.25° | 08-24-40-56 | Cut to point E. |
| 9. | 90° | 08-24-40-56 | Cut to point F. Level girdle. |
| | | | |
| CROWN | | | |
| STEP | ANGLE | INDEX | COMMENT |
| 1. | 37.75° | 01-63-31-33 | |
| 2. | 37.75° | 03-61-29-35 | Break facets. |
| 3• | 33.5° | 06-26-38-58 | Match girdle facets. Keep girdle level. |
| 4. | 32.25° | 08-24-40-56 | |
| 5• | 35° | 64-32 7 | |
| 6. | 32° | 05-27-37-59 | Main facets. Cut to "meets" at girdle. |
| 7. | 20° | 16-48 | |
| 8. | 25.5° | 02-62-30-34 | Star facets. |

FACETING - ART OR SCIENCE ? ?

9.

16°

Is faceting an art or is it a science? If you answer both you would be correct, but adding both parts together would only total 50% of the skills needed. The other 50% is patience.

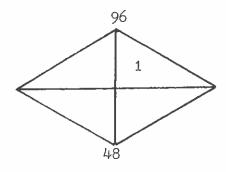
09-23-41-55

from an article by Steve Weinberger in the Gem Cutters' News, Bulletin of the Gem Cutters' Guild of Baltimore, MD.

BEGINNERS LOZENGE

by Tom Ricks

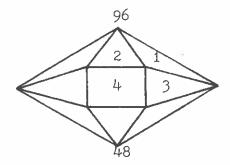
Most stone cuts published for "beginners" are variations on rounds or squares, although no reason for this is apparent. This design, with its acutely pointed ends, provides a challenge of a different sort.



First, preform the girdle outline at 90° indexing 08-88-40-56.

PAVILION

| STEP | ANGLE | INDEX |
|------|-----------------|-------------|
| 1. | 43 ⁰ | 08-88-40-56 |



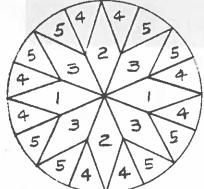
CROWN

| STEP | ANGLE | INDEX |
|------|-----------------|-------------|
| 1. | 46° | 08-88-40-56 |
| 2. | 30° | 96-48 |
| 3. | 17 ⁰ | 24-72 |
| 4. | 00 | ANY - TABLE |

FROM THE NEWSLETTER OF THE MIDWEST FACETERS' GUILD -

BEGINNERS BRILLIANT

SG INDEX ANGLES ARE FOR CORUNDUM



| 54/4/5 | |
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| 5 4 4 5 | |

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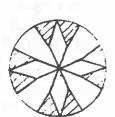
STEP 1

by Ralph Whitney

STEP 3

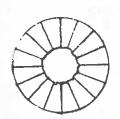
STEP 5



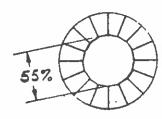


STEP 4

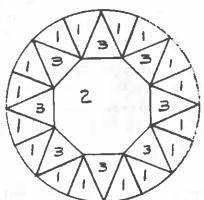
| | | PAVILLION | | LLION |
|-------|----------------|-----------|---------|------------------------|
| | | NO. | ANGLE | INDEX |
| ∑4-Zυ | M | | 42° | 46-96 |
| | 1,11 | 2 | 42° | 24-72 |
| | Zs | 3 | 4-2° | 12-36-60-64 |
| | D _K | 4 | 43° 30' | 3-93,21-27,45-51,69-75 |
| E | EAK | 5 | 43°30' | 9-15,33-39,57-63,61-87 |
| | l 166 | [| | |



STEP 1



STEP 2



| | 11/31/1 |
|---|---------|
| | 3 |
| 3 | 2 3 |
| V | 3 3 1 |
| | VIVI |

| | | CROWN |
|-----|-------|-------------------------|
| NO. | ANGLE | INDEX |
| | 40° | 3-9-15-21-27-33-39-45 |
| 1- | 40° | 51-57-63-69-75-81-87-93 |
| 3 | 37° | 12-24-36-46-60-72-84-96 |



STEP 3

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MIRACLE METAL: NITINOL, discovered by accident by William Buehler, then chief metallurgist for the Navy at the U.S. Naval Ordnance Laboratory.

(NOL) combines Ni (nickel) and Ti (titanium). So you see how it got its name. But, now, at the McDonnell Douglas Astronautics Company in Huntington Beach (CA) an engine runs, not on gas, oil, or electricity, BUT ON WARM WATER!! Its power element is a coiled band of this nickel-titanium alloy that may profoundly alter the fate of a world frantically searching for new sources of energy. The team of scientists that developed the engine calculates that Nitinol power plants may have "an overwhelming cost advantage" over oil, gas and nuclear power generation. Buehler's discovery came in 1958 and it has been subject to research in dozens of laboratories. The amazing alloy, at room temperature is as strong as steel. Dunk it in cold water and it suddenly will turn SOFT! PLIABLE! Bend it and it stays bent. But dip it in hot water and, suddenly coming to life, it will spring back to shape with great force to its original shape. It has sharp memory response; it is a solid-state energy conversion system that requires only a temperature change from cool to warm to release forces as great as 55 tons per square inch.

Kevin Sanders, SCIENCE DIGEST, Oct. 81 via Hui Pohaku O'Hawaii and The SOLANO CHIEFTAIN

DEALERS ATTENTION

COLUMBIA GEM AND MINERAL SOCIETY, Columbia, SC, needs dealers for 14th annual show, October 1-2, 1982

Dutch Square Mall. Contact Dealer Chairman, Amy Quick. 803-776-1964, after 6 p.m. or weekends.

Rt. 4 Box 58, Hopkins, SC 29061

DON'T FORGET
CAROLINAS OPEN FACETING COMPETITION
GEMFEST '82
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